

3. Remarks/Discussion of Issues:

Amendments to the Claims

By the present Amendment, claims 1-22 have been revised, at least in part, to correct minor informalities and to more clearly recite the subject matter.

Specification

The Office Action objects to the title as not descriptive. *See* Office Action, p. 2. Without acquiescing to the propriety of the objection, Applicants have revised the title by the present Amendment.

Information Disclosure Statement

The Office Action notes that listing of references in the specification is not a proper information disclosure statement. *See* Office Action, p. 2. Applicants will provide an information disclosure statement to the extent necessary.

Allowable Subject Matter

Applicants acknowledge with appreciation the Examiner's indication that claim 9 would be allowable, if rewritten in independent form including all of the limitations of the base claim and any intervening claims. *See* Office Action, p. 19. Although Applicants do not disagree that claim 9 recites allowable subject matter, Applicants have not rewritten claim 9 in independent form, but rather have traversed the rejection of claim 2 from which claim 9 depends.

With respect to the Examiner's statement of reasons for indication of allowable subject matter (*see* Office Action, pp. 19-20), Applicants would like to clarify the record with respect to the basis for the patentability of the allowable claims in the present application. In this regard, while Applicants do not disagree with the Examiner's indication of allowability, Applicants submit that the basis for patentability of each of the claims is the respective combination of features recited therein.

35 U.S.C. § 102 Rejection - Claims 1, 18 and 22

The Office Action rejects claims 1, 18 and 22 under 35 U.S.C. § 102(b) as being anticipated by PRAGER (U.S. Patent App. Pub. No. 5,875,104). *See* Office Action, p. 2. Applicants respectfully traverse the rejection for at least the reasons set forth herein, to the extent they are maintained over these claims.

At the outset, Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim.¹ Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference.² Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice.³ For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention.⁴ Applicants' silence on certain aspects of the rejection is by no means a concession as to their propriety.

Claim 1

The Office Action asserts that “power supply units” are disclosed by converter modules 101 and 102, and that “control device” is disclosed by controller 200. *See* Office Action, pp. 2-3. However, the converter modules 101 and 102 of PRAGER do not include at least a window comparator configured to generate mode switch control signals by comparing an output signal from an output stage to at least one signal boundary level and/or an output stage configured to selectively operate in first and second modes in response to the mode

¹ *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983).

² *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990).

³ *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992).

⁴ *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

switch control signals. Rather, the output stages of the converter modules 101 and 102 provide output voltages in response to PR pulses.

Significantly, for anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991). Accordingly, Applicants respectfully assert that PRAGER et al. does not disclose each and every element of claim 1. Thus, withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) is respectfully requested.

Claims 18 and 22

Since each of the dependent claims 18 and 22 depends from a base claim that is believed to be in condition for allowance, Applicants believe that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. Applicants do not, however, necessarily concur with the interpretation of any dependent claim as set forth in the Office Action, nor do Applicants concur that the basis for the rejection of any dependent claim is proper. Therefore, Applicants reserve the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

35 U.S.C. § 103 Rejections

The Office Action rejects claims 2-6, 10, 12 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over MILAVEC et al. (U.S. Patent No. 6,788,036) in view of TRESSLER et al. (U.S. Patent No. 6,281,666). *See* Office Action, p. 4. The Office Action rejects claims 7, 8, 11 and 13 under 35 U.S.C. § 103(a) as being unpatentable over MILAVEC et al. in view of TRESSLER et al. and PRAGER. *See* Office Action, p. 10. The Office Action rejects claims 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over MILAVEC et al. in view of TRESSLER et al. and TANAKA et al. (U.S. Patent No. 6,157,182). *See* Office Action, p. 13. The Office Action rejects claims 19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over PRAGER in view of LANGESLAG et al. (U.S. Patent App. Pub. No. 2002/0113557). *See* Office Action, p. 17. The Office Action rejects claims 20 under 35 U.S.C. § 103(a) as being unpatentable over PRAGER in view of KERN et al. (U.S. Patent No.

6, 081,104). *See* Office Action, p. 18. Applicants respectfully traverse the rejections for at least the reasons set forth herein, to the extent they are maintained over these claims.

Applicants rely on at least on the following standards with regard to proper rejections under 35 U.S.C. § 103(a). A *prima facie* case of obviousness has three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, requires some reason that the skilled artisan would modify a reference or to combine references.⁵ The Supreme Court has, however, cautioned against the use of “rigid and mandatory formulas” particularly with regards to finding reasons prompting a person of ordinary skill in the art to combine elements in the way the claimed new invention does.⁶ But rather, the Supreme Court suggests a broad, flexible “functional approach” to the obviousness analysis recognizing that “[i]n many fields it may be that there is little discussion of obvious techniques or combinations.”⁷ Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the same time the invention was made. In other words, a hindsight analysis is not allowed.⁸ Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims.⁹ Applicants’ silence on certain aspects of the rejections is by no means a concession as to their propriety.

Claim 2

⁵ *See Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332 (Fed. Cir. 2005) (“[S]imply identifying all of the elements in a claim in the prior art does not render a claim obvious.”).

⁶ *See KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007) (“The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.”).

⁷ *Id.* *See also Id.* at 1743 (“Our suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense”) (emphasis in original).

⁸ *See Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200 (Fed. Cir. 1991) (“Hindsight is not a justifiable basis on which to find that ultimate achievement of a long sought and difficult scientific goal was obvious.”).

⁹ *See In re Wilson*, 424 F.2d 1382 (C.C.P.A. 1970) (“All words in a claim must be considered in judging the patentability of that claim against the prior art.”).

Claim 2 recites, in part, that the control device is designed to compare phases of the mode switch control signals of one power supply unit with the phases of the mode switch control signals of a reference power supply unit to determine an actual phase relationship. The Office Action asserts that “power supply unit” is disclosed by power modules 300-303 and that “control device” is disclosed by phase difference error controller 350, delay circuitry 360, current-to-pulse width converter 330, switch 340 and pull-up resistor 345 of MILAVEC et al. *See* Office Action, p. 2.

However, MILAVEC et al. does not teach comparing phases of mode switch control signals of one power supply unit with phases of the mode switch control signals of a reference power supply unit. Rather, MILAVEC et al. discloses translating a current signal from one power module to an internal pulse $V_p(t)$ (via current-to-pulse width converter 330), and comparing the internal pulse $V_p(t)$ of the one power module to an external pulse that results from outputs of all power modules on binary current-share bus 200, including the one power module generating the internal pulse. *See, e.g.*, col. 7, lines 8-60. For example, the signal on the current-share bus 200 is pulled low when the internal pulse $V_p(t)$ of any of the power modules connected to the current-share bus 200 is high. *See, e.g.*, col. 7, lines 18-29. Thus, assuming the Office Action is proposing that the internal pulse $V_p(t)$ discloses “mode switch control signals,” it is apparent that the phases of the internal pulse $V_p(t)$ of the one power module is not compared to the phases of the internal pulse $V_p(t)$ of another power module.

In addition, the Office Action relies on TRESSLER, in combination with MILAVEC et al., to teach the switched mode power supply assembly including a control device having inputs for receiving mode switch control signals from all power supply units, wherein the control device is designed to determine an optimal phase relationship between the phases of the mode switch control signals of one power supply unit and the phases of the mode switch control signals of at least one reference power supply unit. *See* Office Action, pp. 5-6. More particularly, the Office Action asserts that “power supply units” are taught by switching regulators 110A and 110B, that “mode switch control means” of each of the power supply units are taught by phase control circuit 150, and that “control device” is also taught by phase control circuit 150.

Without acquiescing in the propriety of the combination, Applicants submit that TRESSLER does not properly teach or suggest these features of claim 2. Generally, the phase control circuit 150 of TRESSLER cannot be relied up to teach both the mode switch control means of each power supply unit and the control device that controls all of the power supply units. Further, the phase control circuit 150 outputs control signals for controlling the states of transistors in the switching regulators 110A and 110B. Assuming the Office Action is proposing that these control signals disclose first and second mode control signals generated by the mode switch control means of each power supply, it is apparent that the phase control circuit 150 never determines an optimal phase relationship between these control signals of one switching regulator (e.g., 110A) and another switching regulator (e.g., 110B). Indeed, the only comparison is feedback of the collective output voltage (not the control signals themselves) from node 170.

Accordingly, Applicants respectfully submit that no proper combination of MILAVEC et al. and TESSLER teaches or suggests all the limitations of claim 2, and thus Applicants request withdrawal of the rejection under 35 U.S.C. 103(a).

Claims 3-8, 10-17 and 19-21

Applicants respectfully traverse the rejections, since each of the claims 3-8, 10-17 and 19-21 depends from a base claim that is believed to be in condition for allowance. Applicants therefore believe that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. Applicants do not, however, necessarily concur with the interpretation of any dependent claim as set forth in the Office Action, nor do Applicants concur that the basis for the rejection of any dependent claim is proper. Therefore, Applicants reserve the right to specifically address the patentability of the dependent claims in the future, if deemed necessary.

Conclusion

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to

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Amendment and/or Response
In Reply to Office action of June 9, 2011

call Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is any fee occasioned by this response, including an extension fee, please charge any deficiency to Deposit Account No. 141270.

Respectfully submitted on behalf of:
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/Van C. Ernest/

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Date: September 5, 2011

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